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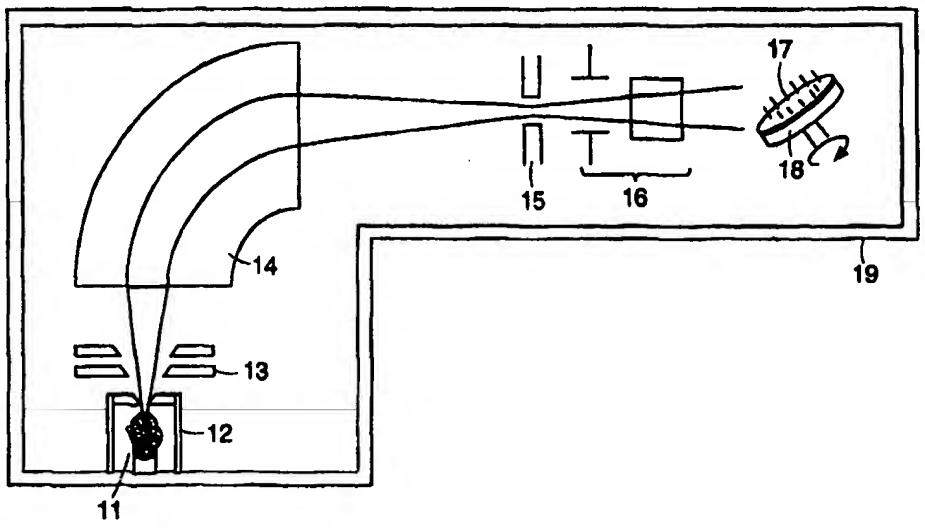

(57) Abstract

Past techniques utilized wet chemistry to produce a carrier–free radioisotope for a seed implant. However, by using the technique of ion implantation, it is possible to physically separate the precursor isotope by magnetic means and further, to physically direct a beam of these isotopically pure atoms and to embed them into a suitable carrier body. Thus, formation of the seed implant may be accomplished using dry techniques, that is, no liquid chemistry. The systems and methods disclosed herein are designed to produce a beam of a single stable isotope using an ion implanter and to further implant this single stable isotope below the surface of a carrier body. After neutron activation, these single stable isotopes will produce the isotopes iodine–125, palladium–103, cesium–131, or ytterbium–169 embedded within the carrier body. Optionally, the carrier body may be encapsulated prior to activating the precursor isotope embedded in the carrier body.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 99/02534

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61N5/10 A61K51/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 98 53880 A (ABLATION TECHNOLOGIES INC) 3 December 1998 see page 3, line 5 - page 11, line 6; claims 1-7 ---	1-3,6,7, 11,12
X	US 5 163 896 A (SUTHANTHIRAN KRISHNAN ET AL) 17 November 1992 see column 2, line 19-27 see column 6, line 32 - column 7, line 51; figures 1-3 ---	1,3,6, 11,12
A	MACPHERSON M S ET AL: "DOSE DISTRIBUTIONS AND DOSE RATE CONSTANTS FOR NEW YTTERBIUM-169 BRACHYTHERAPY SEEDS" MEDICAL PHYSICS, vol. 22, no. 1, 1 January 1995, pages 89-96, XP000505147 --- -/--	1-12

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	KAWASHITA M ET AL: "Preparation of glass for radiotherapy of cancer by P+ ion implantation at 100 keV" NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH, SECTION - B: BEAM INTERACTIONS WITH MATERIALS AND ATOMS, vol. 121, no. 1, 1 January 1997, page 323-327 XP004057934 -----	1-12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
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